

## ABSTRACT OF THE DISCLOSURE

A method and system for automated inference of physico-chemical interaction via co-occurrence analysis of indexed databases. One or more inferences between chemical or biological molecules are automatically generated using a connection network. The methods and system described herein may allow scientists and researchers to automatically create and check inferences of physico-chemical interactions of chemical or biological molecules via co-occurrence analysis of indexed databases. The present invention may also be used to further facilitate a user's understanding of biological functions, such as cell functions, to design experiments more intelligently and to analyze experimental results more thoroughly by automatically creating physico-chemical inferences with co-occurrences. Specifically, the present invention may help drug discovery scientists select better targets for pharmaceutical intervention in the hope of curing diseases. The method and system may also help facilitate the abstraction of knowledge from information for biological experimental data and provide new bioinformatic techniques.